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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DARRIN M. PATEK, SHAUN CLEM, TODD L. KHACHERIAN,
JIMMY PU, and CHRIS REED

Appeal 2009-006218
Application 10/033,328
Technology Center 2400

Before ANTON W. FETTING, JOSEPH A. FISCHETTI, and
THU A. DANG, *Administrative Patent Judges*.

DANG, *Administrative Patent Judge*.

DECISION ON APPEAL¹

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, or for filing a request for rehearing, as recited in 37 C.F.R. § 41.52, begins to run from the “MAIL DATE” (paper delivery mode) or the “NOTIFICATION DATE” (electronic delivery mode) shown on the PTOL-90A cover letter attached to this decision.

I. STATEMENT OF CASE

Appellants appeal the Examiner's second rejection of claims 1-25 under 35 U.S.C. § 134(a). We have jurisdiction under 35 U.S.C. § 6(b). We affirm.

A. INVENTION

According to Appellants, the invention relates to the field of computer networks, and more particularly, to the management of storage networks (Spec. 1, ¶ [0002]).

B. ILLUSTRATIVE CLAIMS

Claims 1 and 22 are exemplary and reproduced below:

1. A method for sending a data item from a source to selected destinations of a plurality of destinations in a switching network, said method comprising:

examining said data item to determine a routing identifier for said data item;

using said routing identifier as an index, accessing a data structure comprising routing control values for said plurality of destinations; and

transferring said data item from said source to said selected destination based on said routing control values, wherein said data item is concurrently transferred from said source to said selected destinations based on said routing control values.

22. A system for multicasting a frame in a router having a plurality of input ports and a plurality of output ports, comprising:

a first crossbar switch for transferring said frame from an input port of said plurality of input ports to a shared memory; a frame pointer for referencing said frame stored in said shared memory;

a second crossbar switch for transferring said frame using said frame pointer to a plurality of selected output ports of said plurality of output ports; and

a control unit for selecting said plurality of selected output ports using a multicast data structure having predetermined multicast routes.

C. REJECTIONS

The prior art relied upon by the Examiner in rejecting the claims on appeal is:

Chin	US 5,617,421	Apr. 1, 1997
Flanders	US 6,172,980 B1	Jan. 9, 2001
Nolan	US 6,661,790 B1	Dec. 9, 2003

Memorandum from P. Almquist on “Type of Service in the Internet Protocol Suite” (July 1992) (hereinafter “RFC 1349”)

Claims 1-7, 14, 16, 18, 21 and 25 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Chin.

Claims 8-13, 15 and 22-24 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chin in view of Nolan.

Claim 17 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Chin in view of RFC 1349.

Claims 19 and 20 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Chin in view of Flanders.

II. ISSUES

1. Has the Examiner erred in finding that Chin teaches “transferring said data item from said source to said selected destinations . . . , wherein said data item is concurrently transferred from said source to said selected destinations” (claim 1), as Appellants contend? In particular, does Chin teach concurrent transfer of data item to selected destinations?

2. Has the Examiner erred in finding that Chin in view of Nolan would have suggested “a first crossbar switch for transferring said frame from an input port,” “a second crossbar switch for transferring said frame using said frame pointer to a plurality of selected output ports” and “a control unit for selecting said plurality of selected output ports” (claim 22), as Appellants contend? In particular, would the combined teachings of Chin and Nolan have suggested a first cross bar switch, a second crossbar switch and a control unit?

III. FINDINGS OF FACT

The following Findings of Fact (FF) are shown by a preponderance of the evidence.

Chin

1. Chin is directed to the interconnection of the segments of prior segmented networks by connecting several individual LAN segments to the ports of a switching fabric circuit, wherein a switching fabric circuit is a circuit that provides for the processing and forwarding of information between LAN segments in a segmented network (col. 1, ll. 43-49).

2. Each port includes transmit and receive circuitry according to the LAN standard of the interswitch link to which it is connected, wherein the ports including circuitry for processing and forwarding packets to increase the throughput of the switching fabric circuits (col. 6, ll. 53-67) and each switching fabric circuit creates and maintains a forwarding table containing information about the location of endstations (col. 7, ll. 1-16).
3. In Chin, it is determined whether the packet is a multicast packet and the multicast packet is forwarded based on the source port of the exit mask at step 1155 (col. 18, ll. 9-22; Fig. 11), wherein the multicast address has a port of an exit mask that specifies less than all of the ports of the domain which causes the packet processor of the source port to forward the system packet to less than all of the ports (col. 17, ll. 53-64).

IV. ANALYSIS

35 U.S.C. § 102

As to claim 1, Appellants contend that “Chin nowhere discloses, teaches or suggests ‘concurrently’ transferring the data item from the source to the selected destinations” (App. Br. 6). In particular, though Appellants admit that “Chin discloses that the multicast packet is forwarded,” Appellants argue that “nowhere does it disclose, either explicitly or inherently, that the multicast packet is forwarded concurrently to other destinations” (App. Br. 7).

However, the Examiner finds “[a]s correctly noted by Appellants (Br. 6-7), Chin teaches ‘forwarding’ a multicast packet” (Ans. 11). Further, the

Examiner explains that “Chin even provides an example of forwarding a multicast packet, wherein a port of exit mask of ‘11000’ causes the packet processor of port 1 to forward the [multicast] system packet to ports 4 and 5” (*id.*). Thus, according to the Examiner, “[w]hile Chin does not use the term ‘concurrently’, one of ordina[ry] skill in the art, armed with even a rudimentary understanding of multicast packet switching, would have understood Chin’s teaching of forwarding a packet to multiple ports inside a switch to mean concurrently forwarding the packet to each of the ports for transmittal” (*id.*).

To determine whether Chin teaches concurrent transfer of data item to selected destinations, we give the claims their broadest reasonable interpretation. *See In re Bigio*, 381 F.3d 1320, 1324 (Fed. Cir. 2004). We note that claim 1 does not place any limitation on what “concurrently” means, includes, or represents, other than reciting that the data item “is concurrently transferred from said source to said selected destinations.” We thus give “concurrently” its ordinary meaning of occurring at the same time.

Additionally, anticipation “is not an ‘ipsissimis verbis’ test.” *In re Bond*, 910 F.2d 831, 832-33 (Fed. Cir. 1990) (citing *Akzo N.V. v. U. S. Int’l Trade Comm’n*, 808 F.2d 1471, 1479 n.11 (Fed. Cir. 1986)). “An anticipatory reference . . . need not duplicate word for word what is in the claims.” *Standard Havens Prods., Inc., v. Gencor Indus., Inc.*, 953 F.2d 1360, 1369 (Fed. Cir. 1991). That is, Chin does not need to specifically state “concurrently” transferring of data items to anticipate claim 1.

Chin teaches determining whether a packet is a multicast packet and forwarding the multicast packet to selected ports at step 1155 (FF 3). Since the multicast packet is forwarded to the selected ports at the same step, we

find the multicast packet to be concurrently transferred (i.e. transferred at the same time) to the selected ports.

Furthermore, the ordinary meaning of a “multicast” as known by the skilled artisan is a single stream of data (i.e., a set of packets) that is transmitted simultaneously to selected multiple hosts who have joined the appropriate multicast group. The skilled artisan would have understood Chin to teach simultaneously (or concurrently) transferring of data packet (item) to selected destinations (multiple hosts who have joined the group).

Thus, we agree with the Examiner that “one of ordina[ry] skill in the art, armed with even a rudimentary understanding of multicast packet switching, would have understood Chin’s teaching of forwarding a packet to multiple ports inside a switch to mean concurrently forwarding the packet to each of the ports for transmittal” (Ans. 11). That is, we disagree with Appellants’ contention that “Chin nowhere discloses, teaches or suggests ‘concurrently’ transferring the data item from the source to the selected destinations” (App. Br. 6).

As for claim 14, Appellants further argue that “the office action fails to show where Chin teaches ‘selected output queue control modules for said plurality of selected output queues, said selected output queue control modules used for copying said data to said plurality of selected output queues’ as recited in claim 14” (App. Br. 8). However, the Examiner finds that “[i]n order to transmit the packets from the selected ports, the packets must be copied to an output queue for that port” and thus “copying data to said plurality of output queues is an inherent part of forwarding the data (multicast packet) to those ports” (Ans. 12).

We agree with the Examiner. That is, Chin discloses routing the multicast data packet to multiple ports (FF 3). Since the packet is sent simultaneously (concurrently) to the multiple ports, copies of the data packet must be made in order to send the packet to multiple ports.

Thus, we find that the Examiner did not err in rejecting claims 1 and 14, independent claim 25 falling with claim 1, and claims 2-7, 16, 18 and 21 depending from claims 1 and 14 respectively under 35 U.S.C. § 102(b).

35 U.S.C. § 103(a)

As to claim 8, Appellants repeat that “[a]s discussed above [with respect to claim 1], Chin does not disclose, teach or suggest this [concurrently transferred] limitation” and add that “Nolan does not cure this deficiency” (App. Br. 9). However, as discussed above, we find no deficiency with respect to Chin.

Thus, we find that the Examiner did not err in rejecting claim 8 and claims 9-13, depending therefrom, over Chin and Nolan under 35 U.S.C. § 103(a). Since Appellants do not provide arguments for claim 15, claim 15 also falls therewith.

As to claim 22, Appellants argue that “Chin and Nolan nowhere teach or suggest the ‘first crossbar switch’, the ‘second crossbar switch’, nor a ‘control unit for selecting said plurality of selected output ports using a multicast data structure having predetermined multicast routes” (App. Br. 11). However, the Examiner concludes that “the claimed ‘first crossbar switch’ corresponds to Chin’s receive circuitry of the switch ports,” “the ‘second crossbar switch’ corresponds to the ‘processing and forwarding’ circuitry,” and “the claimed control unit corresponds to portion of the

switching fabric circuit to maintains and uses the forwarding table to make routing decisions” (Ans. 13).

To determine whether the combined teachings of Chin and Nolan would have suggested the “first crossbar switch,” the “second crossbar switch,” and a “control unit,” we give the claims their broadest reasonable interpretation. We find that claim 22 does not place any limitation on what “first crossbar switch,” “second crossbar switch” or “control unit” means, includes, or represents, other than reciting that the first crossbar switch is “for transferring said frame from an input port,” the second crossbar switch is “for transferring said frame using said frame pointer to a plurality of selected output ports” and the control unit is “for selecting said plurality of selected output ports.” In fact, claim 22 does not define what is a “crossbar switch” wherein “crossbar” is merely a label describing the “switch” without providing any additional functionality to the switch. Thus, we interpret a “crossbar switch” to be a switching element.

Chin is discloses a switching fabric circuit that provides for the processing and forwarding of information between LAN segments in a segmented network (FF 1), wherein the ports including circuitry for transmitting and receiving data packets and circuitry for processing and forwarding the packets to increase the throughput of the switching fabric circuits (FF 2). One of ordinary skill in the art would have understood Chin in view of Nolan to suggest a switching fabric circuit that includes an element for transferring the data packet from an input port, an element for transferring the frame to selected output ports, and a control unit for selected the output ports. Accordingly, we conclude that Chin in view of Nolan would have suggested a switching element “for transferring said frame from

an input port,” a switching element “for transferring said frame using said frame pointer to a plurality of selected output ports” and “a control unit for selecting said plurality of selected output ports” as required by claim 22.

Though Appellants add in the Reply Brief that “a crossbar switch is a well-known switching element” and that “the receiving and processing circuitry within each of Chin’s ports are not equivalent to first and second crossbar switches” (Reply Br. 5), Appellants appear to be arguing that claim 22 is not anticipated by Chin. However, the test for obviousness is what would have been suggested to those of ordinary skill in the art by the combined teachings of Chin and Nolan. A skilled artisan would have found it obvious that the circuits in the switching fabric circuits to comprise switching elements, wherein the switching elements may also comprise the crossbar switch which Appellants acknowledge as well-known switching elements. As clarified in *KSR*, the skilled artisan is “a person of ordinary creativity, not an automaton.” *See KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 421 (2007).

Appellants have presented no evidence that using a crossbar switch as the switching element of Chin was “uniquely challenging or difficult for one of ordinary skill in the art” or “represented an unobvious step over the prior art.” *Leapfrog Enters., Inc. v. Fisher-Price, Inc.*, 485 F.3d 1157, 1162 (Fed. Cir. 2007) (citing *KSR*, 550 U.S. at 418).

Thus, we find that the Examiner did not err in rejecting claims 22 and claims 23 and 24 depending therefrom under 35 U.S.C. § 103(a).

Similarly, as to claims 17, 19, and 20, Appellants merely argue that “RFC 1349 also fails to cure this deficiency [of Chin]” and “Flanders fails to cure this deficiency [of Chin]” (App. Br. 12). However, as discussed above,

we find no deficiency in Chin. Accordingly, we find that the Examiner did not err in rejecting claim 17 over Chin in view of RFC 1349 and rejecting claims 19 and 20 over Chin in view of Flanders.

V. CONCLUSIONS AND DECISION

The Examiner's decision rejecting claims 1-7, 14, 16, 18, 21 and 25 under 35 U.S.C. § 102(b) and rejecting claims 8-13, 15, 17, 19, 20, and 22-24 under 35 U.S.C. § 103(a) is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

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